

In an effort to keep parents and guardians informed of the expectations and content being covered in math class this year, this informational handout will be provided for each chapter. Its intent is to assist in guiding you in ways to support your child in deepening their mathematical understanding.



Scan the QR code to check out teaching strategies for this chapter.

In each chapter we will spend time reviewing material taught in prior grades as it relates to the standards being taught in fourth grade. Our goal is to keep a balance of skill based learning along with enhancing our student's ability to problem solve and think conceptually.

### Review Material from Prior Grades

- 1) Unknowns in multiplication/division equations. (3.OA.4)
- 2) Multiply side lengths to find area involving real world mathematical problems. (3.MD.7b)
- 3) Real-world and mathematical problems involving perimeters of polygons, including an unknown side length and rectangles with same perimeter and different areas or vice versa. (3.MD.8)
- 4) Shapes share attributes and can define a larger category. Know and draw quadrilaterals. (3.G.1)

### New Material for 4<sup>th</sup> Grade

- 1) I can draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. (4.G.1)
- 2) I can classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. (4.G.2)
- 3) I can recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. (4.G.3)
- 4) I can measure an angle with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through  $\frac{1}{360}$  of a circle is called a "one-degree angle," and can be used to measure angles. (4.MD.5)
- 5) I can measure an angle that turns through  $n$  one-degree angles and have an angle that measures  $n$  degrees. (4.MD.5)
- 6) I can measure angles in whole-number degrees using a protractor and sketch angles of specified measure. (4.MD.6)
- 7) I can recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems. (4.MD.7)

\*Please note the list above highlights the main skills to be assessed. Teachers may include additional content to meet the needs of their students.

### End of Chapter Expectations

- 1) Chapter Assessment

### Strategies for Geometry

#### ☺ Family Practice ☺

Check out some of these free, math websites to practice geometry concepts and skills.

- 1) Shape Lab- Level Hard

<http://www.bbc.co.uk/bitesize/ks1/maths/shapes/play/popup.shtml>

- 2) Symmetry Sort

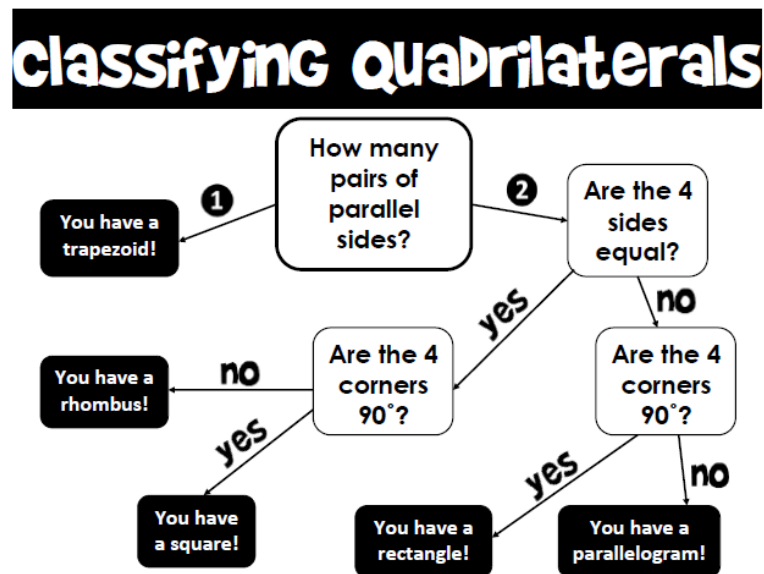
<http://www.crickweb.co.uk/ks2numeracy-shape-and-weight.html#Symm>

- 3) Measuring Angles

[http://www.abcya.com/measuring\\_angles.htm](http://www.abcya.com/measuring_angles.htm)

#### Quadrilaterals

A polygon with four sides is a quadrilateral.

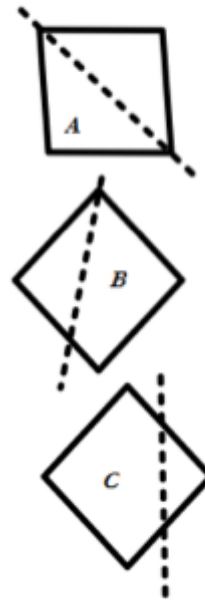


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### Strategies for Geometry

#### Line of Symmetry

Lines through a figure such that when the figure is folded along the line two halves are created that match up exactly.



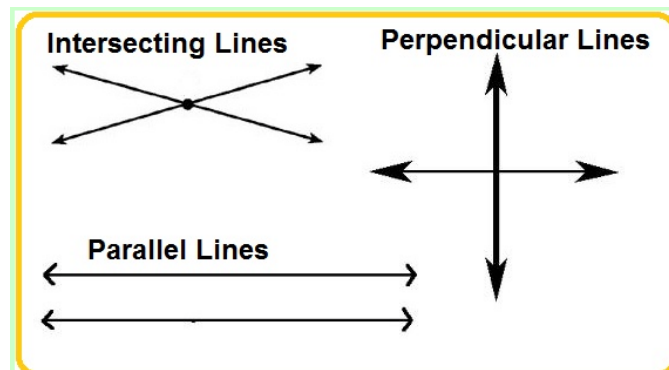
Consider figures A, B, and C. Only one of them shows a line of symmetry. Students will need to see that figure A can be folded along the dotted line making the halves line up exactly. Therefore, figure A has the line of symmetry.

#### Lines

Parallel- two lines in a plane that do not intersect

Perpendicular- Two lines are perpendicular if they intersect, and any of the angle formed between the lines is a 90 degree angle.

Intersecting lines- lines that contain at least one point in common.



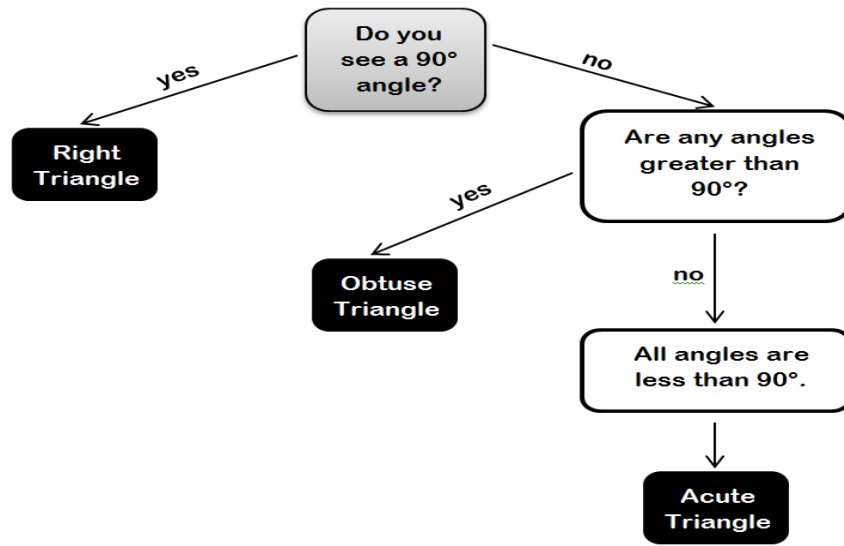
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Strategies for Geometry

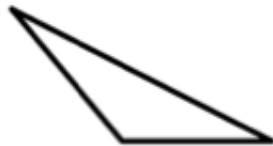
**Triangle**

A triangle consists of three points and the three line segments between them. The three line segments are called the sides of the triangle and the three points are called the vertices.

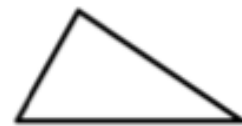
**classifying Triangles**



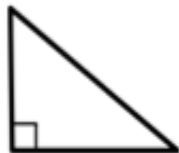
Obtuse triangle- triangle with an interior obtuse angle.



Scalene triangle- triangle with no sides or angles equal.



Right triangle- triangle that contains one 90 degree angle.



Isosceles triangle- triangle with at least two equal sides.

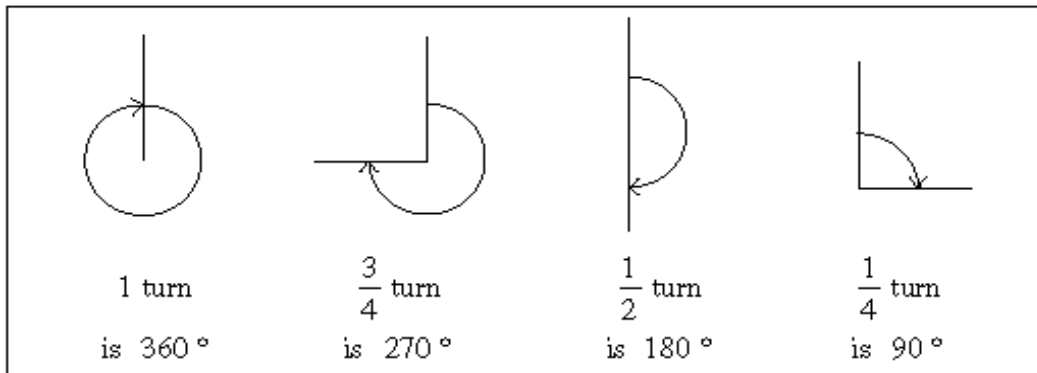


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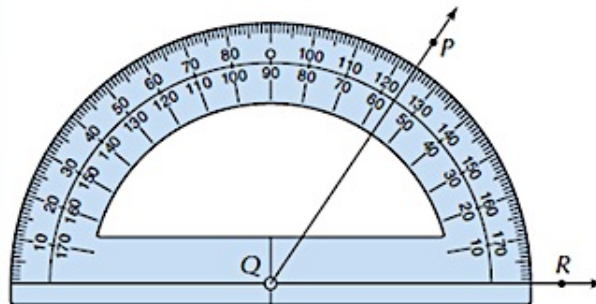
## Strategies for Geometry

**Angle**

The amount of turning between two lines meeting at a common point is an angle. Angles are measured by the amount of rotation, or turning, from one ray to another.

**To Measure an Angle**

Place the protractor's center on the angle's vertex. Place the  $0^\circ$  mark on one side of the angle. Read the measure where the other side of the angle crosses the protractor.



The measure of  $\angle PQR$  is  $56^\circ$ .

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Strategies for Geometry

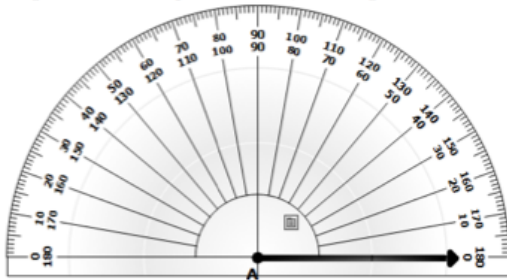
**Using a Protractor to Draw Angles**

Students are asked to draw angles that match a certain degree measure. These are steps for drawing a 70° angle.

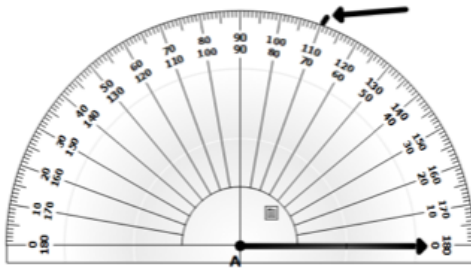
**Step 1** - Draw a ray and label the endpoint A.



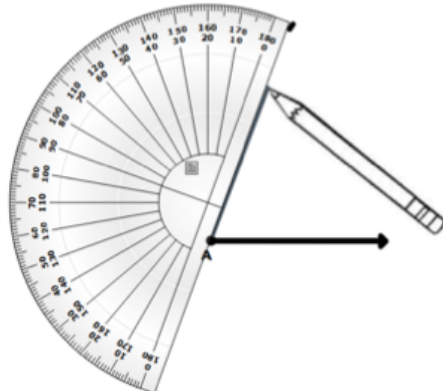
**Step 2** - Line up the protractor, placing the center over endpoint A making sure the ray lines up with the 0° line.



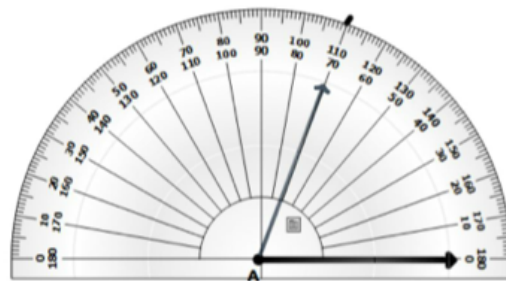
**Step 3** - Find 70° on the protractor and draw a small point right above it.



**Step 4** - Use the straight edge of the protractor to draw the next ray beginning at point A and continuing to the mark you made above the 70°.



**Step 5** - Use the protractor to verify the angle is 70°.



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